CLAIMS

1. A topical preparation comprising:

an internal phase; and

an external phase; wherein:

said internal phase is dispersed within said external phase;

said internal phase comprises at least one hydrophilic carrier and at least one active agent; and

said external phase comprises a silicone matrix.

2. The topical preparation as claimed in claim 1 wherein said at least one active agent is hydrophilic, and wherein said at least one active agent may be released from said silicone matrix.

3. The topical preparation as claimed in claim 1 wherein said internal phase comprises droplets dispersed within said external phase, and wherein said droplets are from about 0.1 μm to about 2000 μm in diameter.

4. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 1000 μm in diameter.

5. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 500 μm in diameter.

6. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 200 μm in diameter.

7. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 100 μm in diameter.

8. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 50 μm in diameter.

9. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 10 μm in diameter.

10. The topical preparation as claimed in claim 3 wherein said droplets are from about 0.1 μm to about 5 μm in diameter.

11. The topical preparation as claimed in claim 1 wherein said at least one hydrophilic carrier is selected from propylene glycol, polyethylene glycol, poloxamer, glycerin, alcohol, polyhydric alcohol, and water, and combinations thereof.

12. The topical preparation as claimed in claim 1 wherein said at least one hydrophilic carrier comprises polypropylene glycol.

13. The topical preparation as claimed in claim 1 wherein said at least one hydrophilic carrier comprises up to about 50% by weight of said topical preparation.

14. The topical preparation as claimed in claim 1 wherein said at least one active agent comprises at least one enzyme selected from hydrolases, cutinases, oxidases, transferases, reductases, hemicellulases, esterases, isomerases, pectinases, lactases, peroxidases, laccases, catalases, polypeptides, antibodies, peptides, hormones, cytokines, and growth factors, and combinations thereof.

15. The topical preparation as claimed in claim 1 wherein said at least one active agent comprises at least one hydrolase enzyme.

16. The topical preparation as claimed in claim 15 wherein said hydrolase enzyme is selected from lipases and proteases.

17. The topical preparation as claimed in claim 16 wherein said protease comprises a subtilisin protease.

18. The topical preparation as claimed in claim 16 wherein said protease comprises Protease A or Protease B.

19. The topical preparation as claimed in claim 16 wherein said protease comprises LG12.

20. The topical preparation as claimed in claim 15 wherein said hydrolase enzyme comprises a lipase, and wherein said lipase comprises from about 0.0001% to about 0.2% by weight of said silicone matrix.

21. The topical preparation as claimed in claim 15 wherein said hydrolase enzyme comprises a protease, and wherein said protease concentration is about 0.1 mg/g to about 5.0 mg/g of said topical preparation.

22. The topical preparation as claimed in claim 1 wherein said internal phase further comprises at least one hydrophilic component.

23. The topical preparation as claimed in claim 22 wherein said at least one hydrophilic component is selected from polyvinyl alcohol and polyvinylpyrrolidone and combinations thereof.

24. The topical preparation as claimed in claim 23 wherein said at least one hydrophilic component comprises up to about 50% by weight of said internal phase.

25. The topical preparation as claimed in claim 23 wherein said at least one hydrophilic component comprises up to about 35% by weight of said internal phase.

26. The topical preparation as claimed in claim 22 wherein said at least one hydrophilic component comprises from about 5% to about 40% by weight of said topical preparation.

27. The topical preparation as claimed in claim 22 wherein said at least one hydrophilic component comprises from about 10% to about 35% by weight of said topical preparation.

28. The topical preparation as claimed in claim 22 wherein said at least one hydrophilic component comprises from about 15% to about 35% by weight of said topical preparation.

29. The topical preparation as claimed in claim 22 wherein said at least one hydrophilic component comprises a water-thickening agent.

30. The topical preparation as claimed in claim 1 wherein said silicone matrix is selected from high molecular weight polydimethylsiloxanes, loosely or lightly cross-linked silicone elastomers, fillerless elastomers, cellular elastomers, silicone rubbers, silicone pressure sensitive adhesives, and combinations thereof.

31. The topical preparation as claimed in claim 1 wherein said external phase further comprises a silicone-based surfactant.

32. The topical preparation as claimed in claim 1 wherein said internal phase and said external phase are selected such that said topical preparation comprises a topical dressing, and wherein said topical dressing comprises a patch.

33. The topical preparation as claimed in claim 32 wherein said patch is up to about 25 μm thick.

34. The topical preparation as claimed in claim 32 wherein said external phase comprises a loosely or lightly cross-linked silicone elastomer.

35. The topical preparation as claimed in claim 34 wherein said internal phase comprises propylene glycol and a protease.

36. The topical preparation as claimed in claim 35 wherein said internal phase further comprises a hydrophilic component selected from polyvinyl alcohol and polyvinyl propylene.

37. The topical preparation as claimed in claim 1 wherein said internal phase and said external phase are selected such that said topical preparation comprises a topical dressing, and wherein said topical dressing comprises a spread on film.

38. The topical preparation as claimed in claim 37 wherein said external phase comprises a silicone rubber.

39. The topical preparation as claimed in claim 1 wherein said internal phase and said external phase are selected such that said topical preparation comprises an ointment.

40. The topical preparation as claimed in claim 39 wherein said external phase comprises at least one silicone elastomer and at least one silicone surfactant.

41. The topical preparation as claimed in claim 40 wherein said internal phase comprises an active agent and propylene glycol.

42. The topical preparation as claimed in claim 41 wherein said internal phase further comprises polyvinyl alcohol.

43. A method of forming a topical preparation, comprising:

preparing an internal phase, wherein said internal phase comprises at least one hydrophilic carrier and at least one active agent;

preparing an external phase, wherein said external phase comprises a silicone matrix;

dispersing said internal phase within said external phase to form said topical preparation.

44. The method as claimed in claim 43 wherein said step of dispersing comprises stirring together said internal phase and said external phase by hand.

45. The method as claimed in claim 43 wherein said step of dispersing comprises mixing together said internal phase and said external phase using a high shear mixer.

46. The method as claimed in claim 43 wherein said method further comprises casting said topical preparation into patches.

47. The method as claimed in claim 43 wherein said step of dispersing is carried out such that said internal phase forms droplets dispersed within said external phase.

48. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 2000 μm in size.

49. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 1000 μm in size.

50. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 500 μm in size.

51. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 200 μm in size.

52. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 100 μm in size.

53. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 50 μm in diameter.

54. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 10 μm in diameter.

55. The method as claimed in claim 47 wherein said droplets are from about 0.1 μm to about 5 μm in diameter.

56. A method of providing an active agent topically, comprising:

providing a topical preparation, wherein said topical preparation comprises an internal phase and an external phase; wherein:

said internal phase is dispersed within said external phase;

said internal phase comprises at least one hydrophilic carrier and at least one active agent; and

said external phase comprises a silicone matrix;

placing said topical preparation in contact with the skin of a patient such that said active agent is released from said silicone matrix topically onto said skin of said patient.

57. The method as claimed in claim 56 wherein said active agent is selected such that said active agent may remove necrotic tissues upon release from said silicone matrix.

58. The method as claimed in claim 56 wherein said active agent is selected such that said active agent may cleanse a wound on said skin of said patient upon release from said silicone matrix.

59. The method as claimed in claim 56 wherein said active agent is selected such that said active agent may self-sterilize a wound on said skin of said patient upon release from said silicone matrix.

60. The method as claimed in claim 56 wherein said active agent is selected such that said active agent may provide anti-infection properties on said skin of said patient upon release from said silicone matrix.

61. The method as claimed in claim 56 wherein said active agent is selected such that said active agent may accelerate healing of a wound on said skin of said patient upon release from said silicone matrix.

62. The method as claimed in claim 56 wherein said silicone matrix is selected to have a cross-link density suitable for providing a desired rate of active agent release from said silicone matrix.

63. The method as claimed in claim 56 wherein said internal phase further comprises a hydrophilic component, and wherein said hydrophilic component is selected such that said active agent is released from said silicone matrix at a desired rate.

64. The method as claimed in claim 56 wherein said topical preparation comprises a patch having a thickness, and wherein said thickness of said patch is selected such that said active agent is released from said silicone matrix at a desired rate.

65. The method as claimed in claim 56 wherein said topical preparation has an occlusivity to air, and wherein said occlusivity to air of said topical preparation is selected such that said active agent is released from said silicone matrix at a desired rate.

66. The method as claimed in claim 56 wherein:

said topical preparation has an occlusivity to fluid;

said active agent is selected such that said active agent may remove necrotic tissues upon release from said silicone matrix;

said occlusivity to fluid promotes a moist environment that allows swelling of necrotic tissues covered by said topical preparation such that said necrotic tissue becomes swollen; and

said active agent released from said silicone matrix selectively removes said swollen necrotic tissues.

67. The method as claimed in 66 further comprising:

providing a second topical preparation comprising an internal phase and external phase, wherein:

said internal phase is dispersed within said external phase;

said internal phase comprises at least one hydrophilic carrier at at least one second active agent selected such said second active agent inhibits said active agent selected to remove necrotic tissue;

said external phase comprises a silicone matrix; and

said silicone matrix comprises a silicone adhesive;

placing said second topical preparation on said skin of said patient around a wound on said skin; and

adhering said topical preparation over said wound by contacting said topical preparation to said second topical preparation, wherein said skin of said patient around said wound is protected from said active agent selected to remove necrotic tissues.